

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL P. ELAND and KEVIN L. MILLER

Appeal No. 1998-2498
Application No. 08/603,696

ON BRIEF

Before KRASS, JERRY SMITH and BARRY, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-12, all of the pending claims.

The invention is directed to position sensors. In order to improve on prior art systems, wherein the position of a magnetic reading head is determined by accurately determining a switch trip position, but wherein the trigger position of the switch varied from drive to drive due to component and assembly tolerances, the instant invention accurately

determines once during manufacture the switching position and records that position in a permanent memory. Since the switching position is known to the drive controller, calibration of transducer position during an initialization procedure is easily enabled. Thus, accurate transducer position is achieved without requiring absolute position accuracy of a sensor switching point.

Representative independent claim 5 is reproduced as follows:

5. A method for calibrating a position sensor for an object, the method comprising the following steps:
- a. moving the object with a controller;
 - b. sensing when the sensor switches from a first state to a second state, the position of the sensor relative to a reference position being unknown;
 - c. measuring the position of the object relative to the reference position with a precision calibration fixture when the sensor switches from the first state to the second state; and
 - d. recording the position of the object in a memory device readable by the controller, thereby enabling the position of the object relative to the reference position to be accurately known.

The examiner relies on the following references:

Alsborg et al. (Alsborg)	5,491,595	Feb. 13, 1996 (Filed Sep. 09, 1992)
Fornoff et al. (Fornoff)	GB 2,265,719	Oct. 06, 1993

Claims 1-12 stand rejected under 35 U.S.C. § 103 as unpatentable over Alsborg in view of Fornoff.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

We reverse.

It is the examiner's position that Alsborg discloses the claimed invention but for the claimed memory for storing a numerical value indicative of the position of the object at a reference position relative to a sensor. The examiner relies on Fornoff for the teaching of storing a numerical value indicative of the position of the object at a reference position relative to a sensor for the purpose of accurately determining the distance from the sensor when switching occurs. The examiner then concludes that it would have been obvious to use a memory to store a numerical value indicative of the position of the object at a reference position relative to a sensor as taught by Fornoff on the system of Alsborg in order to accurately determine the distance from the sensor when switching occurs.

Fornoff does, indeed, determine the reference position of an object and it does so by sensing switching points as a magnetic element is passed back and forth over a

Hall element, storing the switching points and determining the reference position by averaging measured distance, while another Hall element measures the number of revolutions of a drive motor in order to determine relative movement of the object about the reference position. However, each of independent claims 1 and 9 requires the stored numerical value, which is indicative of a position of the object relative to a reference position when the sensor switches from a first to a second state, to have been previously determined. Independent claim 5 recites the actual calibration wherein the position of the object relative to the reference position is measured with a precision calibration fixture when the sensor switches from the first to the second state and then the position is recorded in a memory device, readable by the controller and enabling the position of the object relative to the reference position to be accurately known.

While Fornoff counts rotations of the drive motor and this numerical value does indicate location of the object relative to whatever was the counting starting point, when the sensor switches, we find ourselves in agreement with appellants that these rotation counts of Fornoff are not measurements of the object position relative to the reference position “because the reference position is not known” [principal brief, page 9]. There simply is no predetermined numerical value, indicative of an object position relative to a reference position, as set forth in claims 1 and 9, in Fornoff. Similarly, Fornoff lacks any suggestion of the calibration method set forth in instant claim 5 wherein the

position of the object relative to the reference position is measured with a precision calibration fixture when the sensor switches from the first to the second state and then the position is recorded in a memory device. The relative position is not measured or recorded by Fornoff because the reference position is simply not known at the time the sensor switches states. While the relative position may be known after the fact, Fornoff does not provide for the claimed numerical value "having been previously accurately determined." Alsborg does not remedy this deficiency of Fornoff.

Accordingly, the examiner's decision rejecting claims 1-12 under 35 U.S.C.
§ 103 is reversed.

REVERSED

ERROL A. KRASS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JERRY SMITH)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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LANCE LEONARD BARRY)	
Administrative Patent Judge)	

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